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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/700,054 | 11/04/2003 | Young-chol Lee | 1793.1048 | 3105 |
| 21171 | 7590 | 07/14/2005 | EXAMINER | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | CRUZ, MAGDA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2851 | |

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/700,054 | LEE ET AL. |
| | Examiner | Art Unit |
| | Magda Cruz | 2851 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 28 April 2005.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-21 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 04 November 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Johanson.

Johanson (US 2004/0032739 A1) discloses:

- Regarding claim 17, a lighting system (Figure 5) comprising a lamp light source (Figure 5, element 60) radiating light, a reflector (Figure 5, element 40) reflecting the light emitted from the lamp light source (Figure 5, element 60) to emit the light in one direction; and an intercepting unit (Figure 5, element 50) reflecting a portion of the light (Figure 5, element G₁) emitted from the lamp light source (Figure 5, element 60) toward the reflector so that the light emitted from the reflector has an annular light distribution (page 2, paragraph 0031).
- Regarding claim 18, the reflector (Figure 5, element 40) is an elliptic mirror or a parabolic mirror (page 2, paragraph 0034, line 4).

- Regarding claims 19 and 20, the intercepting unit (Figure 5, element 50) is convex (shape of element 50 on Figure 5), the surface thereof curving toward the lamp light source (Figure 5, element 60).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Kurtz et al. Kurtz et al. (US Patent Number 6,577,429 B1) discloses a projection system (Figure 10, element 100) comprising a first reflecting mirror (Figure 10, element 280), a second reflecting mirror (Figure 10, element 285), and a display device (column 19, lines 6-7) provided in the surface of the first reflecting mirror (Figure 10, element 280), wherein the second reflecting mirror (i.e. Schlieren optical system; Figure 10, element 285) receives light reflected (Figure 10, element 275) from the first reflecting mirror and reflects the received light toward the display device (column 19, lines 4-13).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz et al. in view of Choi.

Kurtz et al. (US Patent Number 6,577,429 B1) discloses a projection system (Figure 10, element 100) comprising a lighting system (Figure 10, element 110), a screen (Figure 10, element 215); a first reflecting mirror (Figure 10, element 280), a display device (column 19, lines 6-7) provided in a predetermined position in the first reflecting mirror (Figure 10, element 280), a second reflecting mirror (i.e. Schlieren optical system; Figure 10, element 285) reflecting light reflected from the first reflecting mirror (Figure 10, element 280) toward the display device, and a projection lens unit (Figure 10, element 205) enlarging and projecting a color image formed by the display device onto the screen (Figure 10, element 215); shielding plates (Figure 10, element 160) provided in the centers of the uniform light forming units (Figure 10, element 175), shielding incident light (Figure 10, element 130) from proceeding; wherein the uniform light forming units are integrating rods or an array of fly eye lenses (Figure 10, element 178a, 178b); wherein the first reflecting mirror (Figure 10, element 280) and the second reflecting mirror (Figure 10, element 285) are symmetrical with respect to an optical axis; wherein each of the first and second reflecting mirrors is one of an elliptic mirror, a plane mirror, an aspherical mirror, and a spherical mirror (column 19, lines 1-3).

Kurtz et al. teaches the salient features of the present invention, except a color filter separating light emitted from the lighting system according to wavelengths of the light; reflecting the light passing through the color filter to change a path of the light; and

collimating lenses provided in an optical path between the color filter and the first reflecting mirror, wherein the collimating lenses convert incident light into parallel light.

Choi (US Patent Number 6,457,830 B1) discloses a color filter (Figure 4, element 121) separating light emitted from the lighting system (Figure 4, element 110) according to wavelengths of the light; reflecting the light passing through the color filter (Figure 4, element 121) to change a path of the light; and collimating lenses (Figure 4, element 131) provided in an optical path between the color filter (Figure 4, element 121) and the first reflecting mirror (see Figure 4), wherein the collimating lenses convert incident light into parallel light (column 3, lines 58-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to insert the color filter disclosed by Choi in the beam expansion optics from Kurtz et al.'s invention, for the purpose of forming a uniform light beam (Choi, column 3, line 55).

7. Claims 2-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz et al. in view of Choi as applied to claims 1 and 10-16 above, and further in view of Johanson.

Kurtz et al. (US Patent Number 6,577,429 B1) in combination with Choi (US Patent Number 6,457,830 B1) teaches the salient features of the present invention, except an intercepting unit reflecting a portion of the light emitted from the lamp light source toward the reflector so that the light emitted from the reflector has an annular light distribution, wherein the intercepting unit is convex, the surface thereof curving toward the lamp light source.

Johanson (US 2004/0032739 A1) discloses an intercepting unit (Figure 5, element 50) reflecting a portion of the light emitted from the lamp light source (Figure 5, element 60) toward the reflector (Figure 5, element 40) so that the light emitted from the reflector (Figure 5, element 40) has an annular light distribution, wherein the intercepting unit (Figure 5, element 50) is convex (shape of element 50 on Figure 5), the surface thereof curving toward the lamp light source (Figure 5, element 60).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the light source and the intercepting unit disclosed by Johanson, in substitution of the light source from Choi's invention, for the purpose of reflecting additional light into the illumination tube (Johanson; page 2, paragraph 0032, lines 22-23).

Response to Arguments

8. Applicant's arguments filed 04/28/2005 have been fully considered but they are not persuasive.
9. The applicant has argued that Johanson (US 2004/0032739 A1) does not teach "fails to disclose the claimed intercepting unit reflecting a portion of the light emitted from the lamp light source toward the reflector". However, Johanson teaches such intercepting unit (Figure 5, element 50) reflecting a portion of the light emitted from the lamp light source (Figure 5, element 60) toward the reflector (Figure 5, element 40).
10. The applicant has argued that Kurtz et al. does not teach a "display device provided in the surface of the first reflecting mirror, or wherein the second reflecting

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mirror receives light reflected from the first reflecting mirror and reflects the received light toward the display device". However, Kurtz et al. teaches such display device (column 19, lines 6-7) provided in the surface of the first reflecting mirror (Figure 10, element 280), or wherein the second reflecting mirror (Figure 10, element 285) receives light reflected (Figure 10, element 275) from the first reflecting mirror and reflects the received light toward the display device (column 19, lines 4-13). Furthermore, the applicant has argued that "element 285 in Kurtz et al. is not a mirror that would reflect back to mirror 280"; however, element 285 is a Schlieren optical system. It's well known in the art that one of the elements in a Schlieren optical system is a movable plane mirror.

11. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the rejection is found in Choi et al., wherein collimating lenses provided in the optical path between the color filter and the first reflecting mirror convert incident light into parallel light, for the purpose of forming a uniform light beam.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (571) 272-2114. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**JUDY NGUYEN
SUPERVISORY PATENT EXAMINER**

Magda Cruz
Patent Examiner
July 10, 2005